REMARKS

Favorable reconsideration of this application is requested in view of the following remarks. Claim 1 is amended. The revision to claim 1 is supported, for example, Figure 2A and at page 7, lines 1-8 in the specification. Claims 1-18 are pending in the application, with claim 1 being independent.

Objection to Specification

The Examiner has objected to the specification. In particular, the Examiner asserts that the limitation of claim 1 reciting that "the width of the current flow paths being determined by the thickness dimensions of the edge portions" is not disclosed in the specification. Applicants respectfully disagree. This feature is disclosed, for example, at Figure 1A and at page 6, lines 7-13. As shown in Figure 1A, the edge portions (e.g., convex portions **21**) of a cell (e.g., battery module **2**) vary in thickness and determine the width of a current flow path (e.g., cooling slits **5**). See also Figure 2A and page 7, lines 9-12, discussing the variation in the thickness of the edge portions (e.g., convex portions **21**).

Claim rejections – 35 U.S.C. § 112

Claims 1-18 stand rejected as failing to comply with the written descriptions requirement and as being indefinite.

As noted above, with respect to the specification objection, Applicants respectfully submit that the amendment to claim 1 is fully supported by the specification as filed. With respect to the Examiner's assertion that claim 1 is indefinite, Applicants have amended claim 1 to clarify that the thickness direction of the edge portions is parallel to the width of the coolant flow paths.

Claim rejections - 35 U.S.C. § 102(b)

Claims 1-18 stand rejected under 35 U.S.C. § 102(b) as being anticipated by WO 98/31059 ("*Ovshinsky*"). Applicants respectfully traverse this rejection.

Independent claim 1 is directed a fluid-cooled battery pack system. Each battery module includes at least one cell and has edge portions with dimensions that vary in a thickness direction within a predetermined tolerance. The coolant flow paths have a target width such that a variation in temperature between the battery modules caused by the predetermined tolerance relative to the target width of the coolant flow paths is maintained within a predetermined range and all the battery modules have a predetermined temperature or less when the coolant flows through the coolant flow paths.

In other words, a target width of the coolant flow path is set in consideration of a minimum cooling variation (for example, the difference between HTmax and HTmin as shown in Figure 3) that results from a predetermined tolerance of the edge portions of battery modules. As shown in Figure 3, a curve HTmax represents a heat transfer coefficient when the fabrication tolerance of a cooling slit width is a maximum (i.e., target width plus fabrication tolerance) and curve HTmin represents a heat transfer coefficient when the fabrication tolerance of a cooling slit width is a minimum (i.e., target width minus fabrication tolerance). As shown in Figure 3, a target width can be set taking into consideration a cooling variance caused by the fabrication tolerances. See, for example, page 8, lines 8-25.

Ovshinsky relates to a fluid-cooled battery pack with coolant flow channels and coolant inlets and outlets. *Ovshinsky*, however, does not teach or suggest a selection of a target width of a coolant flow path based on a minimum cooling variation. Instead, *Ovshinsky* selects a width of a coolant flow channel to obtain maximum heat transfer. See page 29, lines 31-32. Thus, *Ovshinsky*

discloses that a target width of a coolant flow path should be selected such that the heat transfer coefficient (HTc) is highest.

Figure 3 of the present invention provides an example that illustrates the differences between selecting a width based on a minimum cooling variation versus a maximum heat transfer. Referring to Figure 3 of the present invention, the heat transfer coefficient (HTc) would be highest with a width of 1 mm. Thus, the disclosure of *Ovshinsky* would suggest selecting a width of 1 mm. However, a minimum cooling variation occurs at a width of 1.8 mm. Thus, the present invention, as recited in claim 1, would select a target width of 1.8 mm.

Accordingly, in contrast to the present invention, *Ovshinsky* does not take into consideration any variation in cooling based on manufacturing tolerances. Instead, *Ovshinsky* simply teaches that a width of a coolant flow channel is selected to obtain maximum heat transfer.

For the above reasons, Applicants submit that independent claim 1 is allowable over the cited art. In addition, claims 2-18 depend from claim 1 and are believed allowable for at least the same reasons. Moreover, each of these dependent claims recites additional features and is believed allowable in its own right. Individual consideration of the dependent claims is respectfully requested.

Claims 7-9 are even further removed from the cited reference. Each of those claims include the feature where the battery modules in the battery pack case have a plurality of concave and convex portions on the sides opposed to other battery modules, and when the battery modules are connected by bringing the opposite convex portions into contact with each other, gaps between the battery modules formed by the concave portions act as the coolant flow paths. By this arrangement, the concave and convex portions on the sides help to maintain the width of the coolant flow paths.

Ovshinsky also does not teach or suggest this arrangement. The module spacers **37** and tabs **38** of *Ovshinsky* are placed on the top and bottom of a battery module. See page 26, lines 22-32. Accordingly, *Ovshinsky* does not teach or suggest a plurality of concave and convex portions on the sides opposed to other battery modules. Accordingly, Applicants respectfully submit that claims 7-9 are allowable over the cited reference.

In view of the above, favorable reconsideration in the form of a notice of allowance is requested.

Respectfully submitted,

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